

Do Malaysian Listed Companies Mitigate Climate-change for Tax Planning? (Adakah Syarikat Tersenarai di Malaysia mengurangkan Perubahan Iklim untuk mengkaji Perancangan Cukai?)

HUI WEI YOU
RAYENDA KHRESNA BRAHMANA
Universiti Malaysia Sarawak

ABSTRACT

This research aims to examine the relationship between climate-change mitigation (CCM) and tax planning in Malaysian market. 248 listed companies and employing OLS with robust standard errors from six non-financial industries were examined from 2008 to 2014. The findings indicate a significant relationship between climate-change mitigation and tax planning. Furthermore, it is observed that climate-change mitigation has contributed negatively to tax planning. It shows that companies in Malaysian market use climate change mitigation in planning their taxation matter.

Keywords: Tax Planning; Climate-change Mitigation

ABSTRAK

Kajian ini bertujuan untuk mengkaji hubungan antara mitigasi perubahan iklim dan perancangan cukai untuk sampel 248 syarikat disenaraikan di Malaysia dan ralat piawai mantap kuasa dua terkecil (OLS) daripada enam industri berasaskan bukan kewangan di syarikat disenaraikan di Malaysia dari tempoh 2008 hingga 2014. Kami mendapati bukti hubungan yang signifikan antara mitigasi perubahan iklim dan perancangan cukai. Kajian kami selanjutnya menunjukkan bahawa mitigasi perubahan iklim telah menyumbang negatif ke atas perancangan cukai. Kajian ini menunjukkan syarikat menggunakan mitigasi perubahan iklim dalam merancang perkara cukai mereka.

Kata kunci: Perancangan Cukai; Mitigasi Perubahan Iklim

INTRODUCTION

In recent decades, many countries have considered seriously environmental degradation due to the thinning of the ozone layer and global warming. Since 1970s, the massive industrialization process has been identified as the main contributor to the global warming (Monteiro & Aibar-Guzman 2010). The current movement of climate protection is fuelled by institutional pressures (Amran et al. 2012). However, many companies consider the climate-change mitigation as an extra cost that leads to low participation (IEA, 2008). This mind-set is contrary with CDP Global Climate-change Report (2015) who observed that 187 companies around the world demonstrate the mitigation efforts of climate-change for better performance. Empirical researches such as Al-Tuwaijri, Christensen and Hughes (2004) and Clarkson, Richardson and Vasvari (2008) confirm a positive relationship between climate-change mitigation and performance.

Climate-change mitigation is an essential element of firms' policy that consider social responsibility and its positive impacts on stakeholders, such as customers, suppliers, employees, shareholders, government, communities and the environment. Most of the business firms try to minimize climate-change as regulatory requirement. However, some companies do so for their own public reputation.

Intriguingly, in the world of accrual accounting, accountants may use the transactions of climate-change mitigation to bypass tax regulation. This is evident in the booming trend of research and corporate social responsibility, whereby accountants use R&D and CSR transactions to cook their accounting book (Chih et al. 2008; Osma 2008; Roychowdhury 2006). Hence, climate-change mitigation can be used for tax exemption. For example, company may use approved donation for climate-change mitigation, and accrue its expenses for lower income. Most of the existing literature is either conceptual by nature (Andrew et al. 2010) or based on the advanced markets (Luo & Tung 2007). There is hardly any literature that discusses the relationship between climate-change mitigation and firm's tax planning in emerging market. Based on these theoretical assumptions, the researcher aims to empirically examine the association between climate-change mitigation and tax planning in Malaysian market.

Malaysia offers unique institutional setting for this research topic. For instance, most Malaysian companies have taken the climate-change mitigation as an important element of their strategies. Sime Darby Berhad as one of the biggest companies in Malaysia contributed millions of Ringgits to various charity funds to mitigate climate-change (Zainal Abidin 2012). DIGI Communication Bhd was awarded MYCarbon Gemilang Award in 2014 and 2015 for its voluntary reporting of greenhouse gas (GHGs) emission reduction projects. Malaysia Inland Revenue Board Malaysia (IRBM) carries out investigations to tackle incorrect tax reports, which are produced to avoid tax. In 2011 and 2010, 961 and 763 tax avoidance cases respectively were resolved. Conversely, the amount of the avoided taxes decreased by 44.00% from RM1168.55 million in 2010 to RM811.50 million in 2011. The amount of the avoided taxes in 2012 dropped to RM 695.70 million. Although the ratio is dropping, but it remains a significant issue for the government. Despite the issuance of many anti-avoidance rules, some companies are still trying to avoid taxes.

Furthermore, Malaysian tax system includes the Self-Administered System (SAS). On 1st January 2005, the IRBM has applied the SAS on taxpayers to encourage voluntary tax fulfilment. Based on the SAS, individual who has income accruing in or derived from Malaysia is supposed to compute tax payable correctly. In short, under SAS, Malaysian corporation can plan their tax.

It is noteworthy that Malaysian taxation law does not punish companies to exercise tax planning by using climate-change mitigation. Under Malaysia Income Tax Act 1967, company may use approved donation relating to project of national interest (Section 44:11C) to set off the amount of donation against aggregate income. Social responsibility payment, such as conservation or preservation of environment approved by the ministry would be accorded full revenue deduction (Section 34/6: h). In addition, company that engages in promoted activity or promoted product, such as conserving energy or generation of renewal energy can apply for pioneer status or Investment Tax Allowance (ITA) under the Promotion of Investment (Amendment) Act 2007. Lastly, in respond to global warming, companies that obtain certificate of green building are eligible to get 100% qualify expenditure. This amount will be deducted from statutory income under Capital Allowance and Industrial Building Allowance (IBA) as per Income Tax Act 1967, Section 3. These are the legal bases for companies in tax planning.

From accounting perspective, tax planning can be done by offsetting revenue-cost association and through the tax incentives given by Malaysia government. For example, to increase earnings in current period, company will recognize future revenue prematurely. Accounting rules require companies to recognize future expenses at the time they recognize the revenue associated with the expenses. Treating climate-change mitigation as early expenses may incur lower profit for the current period. However, treating climate-change mitigation as several periods of cost year, or maybe capitalized it under capital expenditure may incur higher profit. Another way to plan the tax is gaining higher tax incentive through more climate-change mitigation. Government will waive or lower the tax on income due to the green policy imposed by Malaysia explained earlier.

The main driving forces behind climate-change mitigation can be altruistic but it could be due to managerialism. From altruistic perspective, companies mitigate climate-change for good deed. Meanwhile, managerialism argues that mitigating climate-change is solely for achieving company's goal, which is profit optimization via tax planning with this background, the first objective of the paper is to examine the relationship between climate-change mitigation and tax planning. The second objective is to investigate the relationship between tax planning and firm characteristics (firm size, leverage, profitability and growth).

The research follows climate-change mitigation method proposed by Amran et al. (2012) and tax planning model of Lanis and Richardson (2011) and Richardson, Taylor and Lanis (2013). However, the methods have been modified due to limited data of climate-change mitigation in Malaysia. The study focuses on one aspects, role of climate-change mitigation on tax planning. Using content analysis approach, the annual report of the particular firm is examined. A certain score is assigned to the information found in the annual report. For the tax planning, the data is collected from world scope to measure effective tax rates (ETR). The explanation for both measures will be explained in section 3.

The research's contribution is threefold. First, the study provides unique insights regarding the nature and extent to which a climate-change mitigation and firm characteristic are related with tax planning. Second, this study explores climate-change mitigation and tax planning of Malaysian companies. Lastly, the findings could assist in the development of policy for effective climate-change mitigation activities and will support tax authorities in dealing with tax planning.

The rest of the paper is organized as follows. Section 2 presents literature review. Section 3 describes the research methodology. Section 4 discusses the result analysis. Finally, section 5 includes conclusion.

LITERATURE REVIEW

The relationship between climate-change mitigation and tax planning can be viewed from two perspectives, namely altruism and utilitarian. According to altruism, companies -the main contributors to climate change- are doing good deeds by mitigating this issue as part of corporate social responsibility (Monteiro & Aibar-Guzman 2010). Hence, companies mitigate climate-change due to better green environment and good deeds. This altruistic perspective is closely related to agency theory where manager imposes climate-change mitigation to differentiate his firm from the competitors. Agency theory

might explain that manager employs climate-change mitigation due to alignment or entrenchment against principals. The firms may consider it as a reputation cost or a political cost (Chen et al. 2010; Scholes et al. 2005; Slemrod 2004).

Meanwhile, the utilitarian argues that profit maximization is the motive for climate-change mitigation (Bagnoli & Watts 2003; Campbell 2007). In the perspective of utilitarian, climate-change mitigation may build companies' reputation as well as goodwill leading to bigger market share (Freedman 2003). Mitigating climate-change may improve competitive advantage of companies to gain wealth and to achieve economic effectiveness (Pralhad & Hammand 2002).

Despite the abundance of literature on the effects of green policy, there is rarely any research that investigates this phenomenon in emerging markets. Previous studies did not concluded whether climate-change mitigation has positive (Huseynov & Klamm 2012; Khaoula 2013; Landry et al. 2013; Watson 2014), negative (Lanis & Richardson 2011; Slemrod 2004; Sikka 2010; Richardson et al. 2013) or mixed relationship (i.e., Hoi et al. 2013) with tax planning.

For instance, Landry et al. (2013) studied family and non-family Canadian firms in 2004 and 200, and found a positive relationship between climate-change mitigation and tax planning. Huseynov and Klamm (2012) examined firms that use auditor-provided tax services, and found the same conclusion. Khaoula (2013) used a sample of 300 American companies for the period of 1996-2009, and found a positive relationship. Additionally, Watson (2014) tested 7,297 firms in US, and found that climate-change mitigation plays important role in tax planning.

Conversely, a negative association is evidenced in developed countries. Slemrod (2004), for instance, found a negative link by using random sample of tax returns filed for tax from the early 1970's until 1988. Similarly, Sikka (2010) recorded a negative relationship in major firms in UK. Lanis and Richardson (2011) observed in Australia that most of the environment responsible companies are worse in tax planning. More recently, Richardson et al., (2013) evidenced a negative association for the year 2006 and 2009 in 205 Australian firms.

On the other hand, Hoi et al. (2013) showed mixed result. They found that irresponsible climate-change mitigation activities are more aggressive in tax planning, and have significantly negative linkage with tax planning. While responsible climate-change mitigation activities are not significantly related to tax planning. Khaoula (2013) recorded a positive relationship between climate-change mitigation and tax planning in 300 American companies from the year 1996 to 2009.

Agency theory is the dominant theoretical framework of the tax planning literature. The agency theory does not offer a comprehensive detail between climate-change mitigation and tax planning. This theory focuses on the association between managers and shareholders (Jensen & Meckling 1976), while the climate-change mitigation responsibility concentrates on the relation between the company and the stakeholders. The agency theory might explain that manager employs climate-change mitigation due to alignment or entrenchment against principals (Chen et al. 2010; Scholes et al. 2005; Slemrod 2004). Hence, the present study uses the agency theory as a theoretical background to explain the decision making process with regards to the environment.

There is not often examined the relationship between climate change and tax planning. In analysis of this research gap and lack of information concerning firm characteristics this study aimed to examine the relationship between firm characteristics, climate change mitigation, and tax planning among the public listed companies in Malaysia. The contribution of this secondary research is confirm that the agency theory is correctly specify and is appropriate in the Malaysia. The agency theory suggests that collaboration between managers and shareholders can enhance their performance by achieving a higher climate change mitigation and a lower of tax planning. Hence, firms chooses to involve in climate change effort activities it is lower of tax planning. Firms can perform better by organizing the firm to adapt to their environment. The findings also contribute to the theory as expected. The more active in climate change mitigation the less of tax planning which in turn face smaller payment tax pressure; hence, firm may have more proficiency in climate change field and more capitals to achieve projects to climate change effort.

METHODOLOGY

ESTIMATION MODEL

The estimation model of this research follows the approach of Richardson et al. (2013) and Graham et al. (2013). According to these empirical studies, the tax planning is calculated by using effective tax rates (ETRs). There is also book-tax-difference as another measurement, yet, since they all yielded the same results, we solely employ ETR to calculate the tax planning. Moreover, Lanis and Richardson (2011) argue that ETR is closer to accrual accounting system. It is used to indicate the percentage of the firm's tax expense related to earnings before taxes. Low ETR indicates the existence of tax planning activities within the company. Graham et al. (2013) consider that tax planning strategies in permanent book-tax could result in lower taxable income, lower ETR, and therefore, would be higher disclosure climate change mitigation. Their findings show that financial accounting earnings which is the amount of money a company has earned during a given period play a role in motivating the managers to act in tax planning strategies. Almost 80% of respondents consider that top management at their company cares about the ETR as much as they do care about cash taxes paid.

The approach of present study is very similar to the methods used in previous literature as mentioned earlier with some modifications. First, the study considered the effect on the relationship between climate-change mitigation and tax planning. In fact, the study tested non-linear effect on the climate-change mitigation-tax planning link. The model also ran a panel regression and controlled the error terms using white robust standard errors.

The function of tax planning in previous literature involves firm's size, leverage, growth and profitability. The function of equation model is formulated as follows:

$$ETR = f(\text{Size}, \text{Leverage}, \text{growth}, \text{Profitability}) \dots\dots(1)$$

To estimate the above function empirically, all the sample data is pooled, to estimate the following regression model:

$$ETR = \beta_0 + \beta_1 \text{SIZE}_{i,t} + \beta_2 \text{LEVERAGE}_{i,t} + \beta_3 \text{GROWTH}_{i,t} + \beta_4 \text{Profit}_{i,t} + \varepsilon_{i,t} \dots\dots(1)$$

ETR (tax planning) has been defined as the ratio of income tax expense currently payable to pre-tax accounting income. Size is used to represent the firm's size, where it is calculated by using the logarithmic function of the establishing total assets of the firms. The leverage is calculated as the long-term debt scaled by total asset. Ratio of capital expenditure to operating income is taken as the proxy for the firm's growth. Profit means the profitability of the firm's, and ratio of cash flow from operations to total assets is employed as the proxy.

The main objective of this study is to investigate the relationship between climate-change mitigation and tax planning. Hence, a variable climate-change mitigation (CCM) is introduced. The function is as follow:

$$ETR = f(\text{Size}, \text{Leverage}, \text{growth}, \text{Profitability}, \text{climate-change mitigation}) \dots\dots(2)$$

The empirical estimation model of that function is as follow:

$$ETR = \beta_0 + \beta_1 \text{SIZE}_{i,t} + \beta_2 \text{LEVERAGE}_{i,t} + \beta_3 \text{GROWTH}_{i,t} + \beta_4 \text{Profit}_{i,t} + \beta_5 \text{CCM}_{i,t} + \varepsilon_{i,t} \dots\dots(2)$$

This study followed the measurement method of climate-change mitigation (CCM) as described by Amran et al. (2012) using a weighted scheme measurement. Quantitative data is assigned with higher values whereas lower values are assigned to the descriptive data (Amran et al., 2012). The maximum value that can be assigned is 12. The following Table 1 is adapted from Amran et al. (2012) study.

TABLE 1. Weighted climate change mitigation effort.

Items	Weights
Mention of global warming or of the Kyoto Protocol	1
Firm's plan to deal with global warming and objective to control global warming	2
Potential cost to achieve global warming objectives	3
Current cost to reduce the GHG emission	3
Amount of GHG emissions	3

Source: Amran et al. (2012)

DATA AND SAMPLE

Data is collected through two main sources: annual report and Thomson Financials/Datastream. The sample contains 248 publicly listed firms in Bursa Malaysia. Period of study is from 2008 to 2014. This study used panel data composed of time series and cross-sectional data. The diagnostic test is run before employing the panel model. The model is based on the classical assumption, such as normality test, autocorrelation, heteroskedasticity, multicollinearity and the other diagnostic tests (for instance, Breusch Pagan LM, Hausman Test, Pooled OLS test, Random Effect (GLS) test and Fixed-effect model). The model has issue of heteroskedasticity. Therefore, this research excludes the heteroscedasticity by using the second method, which is controlling the standard error. This is done by using white-test robust and white standard errors. The Breusch Pagan LM and Hausman test showed to run the data in Random Effect model.

RESULTS AND DISCUSSION

This research attempted to assess the role of tax planning on climate-change mitigation in Malaysian firms. This section covers empirical results of the present study. It starts with interpretation and analysis of the empirical results from 1488 observations in total of 248 firms including consumer, construction, plantation, property, technology and trading. The descriptive results show the statistics regarding maximum, minimum, mean and standard deviation of the sample. This is followed by findings and discussions.

TABLE 2. Summary of descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
ETR	0.3155	0.9771	-15.6863	13.4850
Growth	0.0012	0.0025	-0.0106	0.0349
Profit	0.0641	0.1975	-0.6336	5.2853
Size	5.7143	0.6357	4.0689	7.9958
Leverage	160.016	248.252	0.4597	86583.31
CCM	3.9079	3.6837	0	12

Number of observations: 1488; Number of companies: 248; Years:7

Summary of the statistics is shown in table 2 above. All determinants variables are represented in ratio. In Table 2, the mean of tax planning (ETR) is 0.315512 with the standard deviation of 0.9770619, ranging from -15.6863 to 13.48499. Growth indicates that the mean (median) is 0.001193 with the standard deviation of 0.002476, and range is -0.01062 to 0.034915. The result stated that the mean of profitability is 0.064121 and the standard deviation is 0.197503 and the range is between -0.63362 to 5.285332. Size stated that the mean is 5.714346 and the standard deviation is 0.635698. The range of size is from 4.068891 to 7.995748. Moreover, the result of descriptive analysis reveals that the means of the independent variables (leverage and climate-change mitigation) are 160.016 and 3.907868 respectively. While the standard deviation is 248.252 and 3.683689 respectively. The leverage range is 0.459647 to 86583.31. The range of climate-change mitigation is 0 to 12.

BASELINE MODEL RESULT

Table 3 depicts the results of baseline model. Firstly, there is no significant impact of growth on the tax planning. The beta coefficient portrays no relationship. This is in line with Nanthakumar, Shahbaz and Taha (2014) who concluded that there is no significant relationship between tax planning and growth. Profitability is not significantly related with tax planning in variation of Model 1(a), Model 1(b), Model 1(c), Model 1(d) and Model 1(e). This implies that there is no statistically significant relationship between tax planning and profitability. The result is supported by Lanis and Richardson (2012); Richardson et al. (2013). Their findings show that there is a positive but not significant relationship between profitability and tax planning. For the leverage, the results of regression show that the variable is not significant in variation of Model 1. This result is consistent with Richardson et al. (2013) who did not find a significant relationship between tax planning and leverage.

TABLE 3. Result of Baseline

	Model 1(a)	Model 1(b)	Model 1(c)	Model 1(d)	Model 1(e)
Growth	-4.0576 (0.2911)	-4.0576 (0.2911)	-2.9002 (0.4255)	-4.1621 (0.3466)	-4.1621 (0.3465)
Profit	0.0471 (0.4911)	0.0471 (0.4911)	0.0483 (0.4814)	0.0481 (0.3253)	0.0481 (0.3252)
Leverage	0.0011 (0.3274)	0.0011 (0.3274)	0.0011 (0.9815)	0.0011 (0.5033)	0.0011 (0.5032)
Size	0.0495** (0.0066)	0.0495** (0.0066)	0.0488** (0.0017)	0.0497** (0.0055)	0.0497** (0.0043)
Cons	0.0345* (0.0738)	0.0345* (0.0738)	0.0839* (0.0840)	0.0334* (0.0594)	0.0334* (0.0594)
Firm Clustered	Yes	Yes	Yes	Yes	Yes
Year Clustered	No	No	No	Yes	Yes
Year Effect	No	Yes	Yes	No	No
Industry Effect	Yes	No	Yes	No	Yes
N	1484	1484	1484	1484	1484
R2	0.1011	0.1011	0.0580	0.1063	0.1830
Adj R2	0.0980	0.0980	0.0548	0.1029	0.1802

For the baseline model panel regression, the data of growth, profitability, leverage and firm size is used for panel regression with fixed effects model. Heteroskedasticity and autocorrelation errors are controlled using white robust standard errors, firm clustering, year clustering, year effect and industry effect. The data is taken from 2008 to 2014. ETR_{it} is tax planning; $SIZE_{it}$ is firm size; LEV_{it} is leverage; $GROWTH_{it}$ is growth; and $PROFIT_{it}$ is profitability. The figures represent the coefficient values of the variables. The values in the parentheses stand for p-values. The level of significance is denoted using the asterisk symbol with *, **, and *** which are equivalent to 10%, 5%, and 1% level of significance respectively. The baseline model shows that the growth, profitability, leverage and firm size are the controlled variables while tax planning is the dependent variable.

Estimated regression model:

$$ETR = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 LEVERAGE_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 Profit_{i,t} + \varepsilon_{i,t}$$

Table 3 above show that the relationships of size, leverage, growth and profitability with tax planning are exactly the same with the baseline model. When the firms are clustered with either year effect or firm effect, when the firms are clustered with both year and industry effect and when the firms and years are clustered with or without industry effect, the result shows there is not much different. This study using white robust standard errors, firm clustering, year clustering, year effect and industry effect to control the heteroskedasticity error. It is for robust test.

Firm size has significant association (5%) with tax planning (ETR). The coefficient is positive. This means that there is statistically positive and significant relationship between tax planning and firm size in Malaysian market. This finding is consistent with Watts and Zimmerman (1986) who discovered that there is positive relation between firm size and tax planning.

Most of control variables basically contribute positively to the firm except for the growth. The findings show that growth, profitability and leverage are not significant in Malaysia. The R- Squared is 9.88% and 11.4% in Model 1(d), and Model 1(e). This means the independent variables explain the dependent variable at the level of 9.88% and 11.4% respectively in Model 1(d), and Model 1(e). If it is within 10% to 90%, it will indicate that R-Squared in panel study is a good R-Squared (Gujarati & Porter 2009).

FULL MODEL RESULT

Table 4 compares tax planning with climate-change mitigation. It shows that climate-change mitigation plays significant role on tax planning. The coefficient is negative with the value of -0.0217, implying the higher the mitigation, the lesser the tax planning. The negative relationship is similar with the results obtained in previous studies (Lanis & Richardson, 2012; Richardson et al., 2013; Khaoula, 2013). The common explanatory variables show that the R-Squared is 16.8% in Model 2. This means that the independent variables explain the dependent variable at the level of 16.8% in Model 2.

TABLE 4. Result of Full Model

	Model 2
Growth	2.3906 (0.5598)
Profit	0.0578 (0.1706)
Leverage	0.0009 (0.3274)
Size	0.0859*** (0.0050)
CCM	-0.0217*** (0.0000)
Constant	0.0975* (0.0854)
Firm Clustered	Yes
Year Clustered	Yes
Year Effect	No
Industry Effect	Yes
N	1483
Adj R2	0.175
R2	0.168

For the climate-change mitigation model panel regression, the data of growth, profitability, leverage, firm size and climate-change analysed using panel regression with a fixed effects model. Heteroskedasticity and autocorrelation errors are controlled using white robust standard errors, firm clustering, year clustering, year effect and industry effect. The data is from 2008 to 2014. ETR_{it} is tax planning; CCE_{it} is climate-change effort; $SIZE_{it}$ is firm size; LEV_{it} is leverage; $GROWTH_{it}$ is growth; and $PROFIT_{it}$ is profitability. The figures represent the coefficient values of the variables. The values in the parentheses stand for the values of the p-values. The level of significance is denoted using the asterisk symbol with *, **, and *** which are equivalent to 10%, 5%, and 1% level of significance respectively.

Estimated regression model:

$$ETR = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 LEVERAGE_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 Profit_{i,t} + \beta_5 CCM_{i,t} + \varepsilon_{i,t}$$

Table 4 shows that the relationships of profit, leverage and firm size with tax planning is exactly the same as in the baseline model except the growth. The growth has become negative. However, there is no multicollinearity problem. In addition, the CCM is negatively related to the tax planning. This suggests that the tax planning will increase when there is less CCM.

When the firms are clustered and years are clustered with firm effect, the size is still significant with the inclusion of CCM in the regression and significant at 1% level of significance. Hence, the increase of size by one unit will increase the cost of equity by 0.0859 unit. Furthermore, the growth, profit and leverage remain insignificant. There is a negative and significant relationship between the CCM and tax planning. The relationship is significant at 1% level. Thus, when the CCM increases by one unit, the cost of equity will increase by 0.0217 unit.

TABLE 5. Diagnostic Tests for Full Model

Multicollinearity	Mean VIF = 5.77 VIF < 10, H_0 is not rejected. Thus, there is no multicollinearity.
Heteroskedasticity	chi2 (11) = 2.6e+08 p-value = 0.0000 Since the p-value is less than 0.05, H_0 is rejected, the variances are not constant. Hence, there is heteroskedasticity problem.
Serial Correlation	F(1,247) = 0.369 Prob > F = 0.5441 Since, the p-value is more than 0.05, H_0 is not rejected. Hence, there is no autocorrelation in this model.
Remedies	Problem: Heteroskedasticity Use: White robust standard errors

The diagnostic test results are displayed in Table 5. Multicollinearity is indicated by Variance Inflation Factor (VIF), results show that there are no multicollinearity problems in Full model. Modified Wald test is used to test the heteroskedasticity problem in the model. Results show that there are existences of heteroskedasticity problem in Full model. Wooldridge test is used to detect the autocorrelation problem and full model did not exhibit serial correlation. The heteroskedasticity has been remedied with the White's robust standard errors.

CONCLUSION

The study examined the phenomenon of current surge in climate-change in Malaysian firms. It is motivated by the lack of attention toward climate-change mitigation. Even though the steady growth mitigation taken by firms, the government's incentives to those companies that mitigate the climate change, it indicate companies use climate change mitigation in planning their taxation matter.

It is observed that climate-change mitigation has negative and significant relationship with tax planning. This study contributes to body of knowledge and industry in two ways. Firstly, findings show an agency issue where managers may use climate-change mitigation to plan their tax. Secondly, this is among the first researcher that used the panel method to find the factor affecting tax planning in Malaysian corporation.

However, the findings need to be validated by further research in other countries, especially in industrial economies to verify the facts about certain common characteristics. For further research, two recommendations are proposed. Firstly, more in-depth insights can be gained through an examination of the possible value of accrual based tax returns or book tax differences. Secondly, internal corporate governance such as duality, board size, board structure and board capital should be taken into consideration.

This findings also have implications for research. Even though many of studies on climate change mitigation and tax planning have been conducted using data from developed countries, there is a lack of studies from developing countries. Therefore, this study ensures the results from developing countries that there is a negative relationship between tax planning and climate change mitigation although the different regulatory structures that separates the markets as climate change mitigation disclosures are still smaller voluntary in most developing countries like Malaysia. Moreover, this study is the best of the researcher's knowledge to provide evidence that negative relationship between climate change mitigation and tax planning.

REFERENCES

- Al-Tuwaijri, S. A., Christensen T. E. & Hughes K. E. 2004. The Relations among Environmental Disclosure, Environmental Performance, and Economic Performance: A Simultaneous Equations Approach', *Accounting, Organizations and Society* 29(5): 447-465.
- Amran, A., Ooi, S. K., Nejati, M., Zulkafli, A. H., & Lim, B. A. 2012. Relationship of firm attributes, ownership structure and business network on climate change efforts: Evidence from Malaysia. *International Journal of Sustainable Development & World Ecology* 19(5): 406-414.

- Andrew, J., Kaidonis, M. A., & Andrew, B. 2010. Carbon tax: Challenging neoliberal solutions to climate change. *Critical Perspectives on Accounting* 21(7): 611-618.
- Bagnoli, M., & Watts S. G. 2003. Selling to Socially Responsible Consumers: Competition and the Private Provision of Public Goods. *Journal of Economics and Management Strategy* 12: 419-445.
- Campbell, J. L. 2007. Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review* 32(3): 946-967.
- Chen, S., Chen, X., Cheng, Q., & Shevlin, T. 2010. Are Family Firms More Tax Aggressive Than Non-Family Firms? *Journal of Financial Economics* 95(1): 41- 61.
- Chih, H. L., Shen, C. H., & Kang, F. C. 2008. Corporate social responsibility, investor protection, and earnings management: Some international evidence. *Journal of Business Ethics* 79(1-2):179-198.
- Clarkson, P. M., Li Y., Richardson G. D. & Vasvari F. P. 2008. Revisiting the Relation between Environmental Performance and Environmental Disclosure: An Empirical Analysis. *Accounting Organizations and Society* 33(4/5): 303-327.
- Freedman, J. 2003. Tax and Corporate Responsibility. *Tax Journal* 695(2): 1-4.
- Graham, J. R., Hanlon, M., Shevlin, T., & Shroff, N. (2013). Incentives for tax planning and avoidance: Evidence from the field. *The Accounting Review* 89(3): 991-1023
- Gujarati, D. N., & Porter, D. C. 2009. *Basic Econometrics*. McGraw-Hill Companies
- Hoi, C. K., Wu, Q., & Zhang, H. 2013. Is corporate social responsibility (CSR) associated with tax avoidance? Evidence from irresponsible CSR activities. *The Accounting Review* 88(6): 2025-2059.
- Huseynov, F., & Klamm, B. K. 2012. Tax avoidance, tax management and corporate social responsibility. *Journal of Corporate Finance* 18(4): 804-827.
- IEA. 2008. *Energy Technology Perspectives*. Paris: International Energy Agency.
- Jensen, M. & Meckling, W. 1976. Theory of the firm: Managerial behavior, agency costs & ownership structure. *Journal of Financial Economics* 3(4): 305-360.
- Khaoula. 2013. The Effects of Board of Directors' Characteristics on Tax Aggressiveness. *Research Journal of Finance and Accounting* 4:140-147
- Landry, S., Deslandes, M., & Fortin, A. 2013. Tax aggressiveness, corporate social responsibility, and ownership structure. *Journal of Accounting, Ethics & Public Policy* 14(3): 611-645.
- Lanis, R., & Richardson, G. 2011. The effect of board of director composition on corporate tax aggressiveness. *Journal of Accounting and Public Policy* 30(1): 50-70
- Lanis, R., & Richardson, G. 2012. Corporate social responsibility and tax aggressiveness: An empirical analysis. *Journal of Accounting and Public Policy* 31(1): 86-108.
- Luo, Y., & Tung, R. L. 2007. International expansion of emerging market enterprises: A springboard perspective. *Journal of International Business Studies* 38(4): 481-498.
- Monteiro, S. M., & Aibar-Guzmán, B. 2010. Determinants of environmental disclosure in the annual reports of large companies operating in Portugal. *Corporate Social Responsibility and Environmental Management* 17(4):185-204.
- Nanthakumar, Shahbaz & Taha .2014. The effect of green taxation and economic growth on environment hazards: the case of Malaysia. Retrieved from <http://www.ipag.fr/fr/accueil/la-recherche/publications-WP.html>
- Osma, B. G.2008. Board independence and real earnings management: The case of R&D expenditure. *Corporate Governance: An International Review* 16(2):116-131
- Prahalad, C. K., & Hammond, A. 2003. Serving the world's poor, profitably. In *Harvard Business Review on Corporate Social Responsibility* 1-26. Boston: Harvard Business School Press.
- Richardson, G., Taylor, G., & Lanis, R., 2013. The impact of board director oversight characteristics on corporate tax aggressiveness: An empirical analysis. *Journal of Accounting and Public Policy* 32(3): 68-88.
- Roychowdhury, S. 2006. Earnings management through real activities manipulation. *Journal of Accounting and Economics* 42(3): 335-370
- Scholes, M.S., Wolfson, M.A., Erickson, M., Maydew, E.L. & Shevlin, T. (2005). *Taxes and Business Strategy: A Planning Approach*. Third Edition. Upper Saddle River, NJ: Prentice-Hall.
- Sikka, P. 2010. Smoke and mirrors: Corporate social responsibility and tax avoidance. In *Accounting Forum* 34(3): 153-168. Elsevier.
- Slemrod, J. 2004. The economics of corporate tax selfishness. *National Tax Journal* 57: 877 -899. St James Ethics Centre.
2009. Corporate Social Responsibility Index. Available at: <http://www.corporate-responsibility.com.au/content/corporate-responsibility-index-results>.
- Watson, L. 2014. Corporate Social Responsibility, Tax Avoidance, and Earnings Performance. *Journal of the American Taxation Association* Forthcoming. Retrieved from: SSRN: <http://ssrn.com/abstract=2540328>
- Watts, R., Zimmerman, J. 1986. Towards a Positive Theory of Accounting. Prentice-Hall, New Jersey.
- Zainal Abidin, Y. 2012. Sime Darby Foundation's corporate social responsibility in higher education and community engagement. In S.K. Gill & N. Ganjaseni (Eds), *Innovative Practices and Challenges across Asean and Asia* (71-76). Bangi, Malaysia: Penerbit Universiti Kebangsaan Malaysia.

Hui Wei You*

Faculty of Economics and Business

Universiti Malaysia Sarawak

Kota Samarahan

94300 Sarawak

MALAYSIA

E-mail: feiyu92you@hotmail.com

Rayenda Khresna Brahmana

Faculty of Economics and Business

Universiti Malaysia Sarawak

Kota Samarahan

94300 Sarawak

MALAYSIA

E-mail: raye_brahm@yahoo.com

*Corresponding author

GALLEY PROOF